

What is claimed is:

1. A cell membrane preparation comprising a mammalian D2 dopamine receptor having an amino acid sequence identified as the amino acid sequence of Fig. 7A-C, Fig. 18A-H or Fig. 18A-H wherein amino acids 242-270 are deleted therefrom.

2. A cell membrane preparation according to claim 1, wherein the mammalian D2 dopamine receptor is encoded by a DNA molecule comprising

- a) a DNA molecule having the sequence of Fig. 7A-C,
- b) a DNA molecule having the DNA sequence 1-1245 of Fig. 1A-E,
- c) a DNA molecule having the DNA sequence 1-1329 of the human DNA sequence of Fig. 18A-H,
- d) a DNA molecule having the DNA sequence 1-723 and 811-1329 of the human DNA sequence of Fig. 18A-H, corresponding to nucleotides 1-1329 of the human DNA sequence of Fig. 18A-H, wherein the nucleotide sequence 724-810 of the human is deleted therefrom, or
- e) a DNA molecule that hybridizes under high stringency conditions to a), b), c) or d).

3. A cell membrane preparation according to claim 1 wherein the cell membrane is prepared from a cell comprising a vector comprising a DNA molecule encoding a mammalian D2 dopamine receptor having an amino acid sequence identified as the amino acid sequence of Fig. 7A-C, Fig. 18A-H or Fig. 18A-H wherein amino acids 242-270 are deleted therefrom.

4. A cell membrane preparation according to claim 3, wherein the vector comprises a DNA molecule that encodes the mammalian D2 dopamine receptor and is

- a) a DNA molecule having the sequence of Fig. 7A-C,
- b) a DNA molecule having the DNA sequence 1-1245 of Fig. 1A-E,
- c) a DNA molecule having the DNA sequence 1-1329 of the human DNA sequence of Fig. 18A-H,
- d) a DNA molecule having the DNA sequence 1-723 and 811-1329 of the human DNA sequence of Fig. 18A-H, corresponding to nucleotides 1-1323 of the human DNA

sequence of Fig. 18A-H, wherein the nucleotide sequence 724-810 of the human is deleted therefrom, or

- e) a DNA molecule that hybridizes under high stringency conditions to a), b), c) or d).

5. A method of producing a cell membrane preparation comprising a mammalian G-protein coupled D2 dopamine receptor polypeptide, comprising expressing a DNA molecule encoding an amino acid sequence identified as the amino acid sequence of Fig. 1A-E, Fig. 18A-H or Fig. 18A-H wherein amino acids 246-272 are deleted therefrom, operably linked to control sequences, in a suitable host, and isolating cell membranes comprising the thus-produced polypeptide.

6. The method of claim 5, wherein the DNA molecule encoding the mammalian G-protein coupled D2 dopamine receptor polypeptide is

- a) a DNA molecule having the sequence of Fig. 7A-C,
b) a DNA molecule having the DNA sequence 1-1245 of Fig. 1A-E,
c) a DNA molecule having the DNA sequence 1-1329 of the human DNA sequence of Fig. 18A-H,
d) a DNA molecule having the DNA sequence 1-723 and 811-1329 of the human DNA sequence of Fig. 18A-H, corresponding to nucleotides 1-1329 of the human DNA sequence of Fig. 18A-H, wherein the nucleotide sequence 724-810 of the human is deleted therefrom, or
e) a DNA molecule that hybridizes under high stringency conditions to a), b), c) or d).

7. A method of screening a compound for binding to a mammalian D2 dopamine receptor on the surface of cells expressing the receptor, the method comprising the following steps:

- (a) transforming a host cell with a recombinant expression construct encoding a mammalian D2 dopamine receptor having an amino acid sequence depicted in Figures 1A through 1E or in Figures 18A through 18H or an amino acid sequence depicted in Figures 18A through 18H wherein amino acid residues 242 through 270 are deleted therefrom and amino acid 271 is an aspartic acid residue, wherein the cells of the transformed cell culture express the receptor;
(b) preparing a cell membrane preparation from said cells; and

- (c) assaying the cell membrane preparation with the compound to determine whether the compound binds to the receptor comprising the cell membrane preparation.

8. A method of screening a compound for competitive binding to a mammalian D2 dopamine receptor on the surface of cells expressing the receptor, the method comprising the following steps:

- (a) transforming a host cell with a recombinant expression construct encoding a mammalian D2 dopamine receptor having an amino acid sequence depicted in Figures 1A through 1E or in Figures 18A through 18H or an amino acid sequence depicted in Figures 18A through 18H wherein amino acid residues 242 through 270 are deleted therefrom and amino acid 271 is an aspartic acid residue, wherein the cells of the transformed cell culture express the receptor;
- (b) preparing a cell membrane preparation from said cells; a
- (c) assaying the cell membrane preparation with the compound in the presence and in the absence of an agonist for the receptor; and
- (d) determining whether the compound competes with the agonist for binding to the receptor comprising the cell membrane preparation.

9. The method of Claim 8, wherein the compound is detectably-labeled.

10. The method of Claim 8, wherein the D2 dopamine receptor agonist is detectably-labeled.

11. The method of Claim 8, wherein the compound that competitively binds to the D2 dopamine receptor is quantitatively characterized by assaying the transformed cell culture with varying amounts of the compound in the presence of a detectably-labeled D2 dopamine receptor agonist and measuring the extent of competition with agonist binding thereby.

12. A method of screening a compound to determine if the compound is an agonist binding inhibitor of a mammalian D2 dopamine receptor on the surface of cells expressing the receptor, the method comprising the following steps:

- (a) transforming a host cell with a recombinant expression construct encoding a mammalian D2 dopamine receptor having an amino acid sequence depicted in Figures 1A through 1E or in Figures 18A through 18H or an amino acid sequence depicted in Figures 18A through 18H wherein amino acid residues 242 through 270 are deleted therefrom and amino acid 271 is an aspartic acid residue, wherein the cells of the transformed cell culture express the receptor; and
- (b) preparing a cell membrane preparation from said cells; a
- (c) assaying the cell membrane preparation with the compound in the presence and absence of a D2 dopamine receptor agonist to determine whether the compound is capable of inhibiting agonist binding to receptor comprising the cell membrane preparation.

13. The method of Claim 12, wherein the compound is detectably-labeled.

14. The method of Claim 12, wherein the D2 dopamine receptor agonist is detectably-labeled.

15. The method of Claim 12, wherein the compound that inhibits D2 dopamine receptor agonist binding is quantitatively characterized by assaying the transformed cell culture with varying amounts of the compound in the presence of a detectably-labeled receptor binding agonist and measuring the extent of inhibition of agonist binding thereby.

16. A compound that inhibits agonist binding to a mammalian G-protein coupled D2 receptor polypeptide, wherein the mammalian G-protein coupled D2 receptor polypeptide as an amino acid sequence is identified as the amino acid sequence of Fig. 7A-C, Fig. 18A-H or Fig. 18A-H wherein amino acids 242-270 are deleted therefrom, and wherein the compound is identified by the method of claim 8.

17. A compound according to claim 16, wherein the mammalian D2 dopamine receptor is encoded by a DNA molecule comprising

- a) a DNA molecule having the sequence of Fig. 7A-C,
- b) a DNA molecule having the DNA sequence 1-1245 of Fig. 1A-E,

- c) a DNA molecule having the DNA sequence 1-1329 of the human DNA sequence of Fig. 18A-H,
- d) a DNA molecule having the DNA sequence 1-723 and 811-1329 of the human DNA sequence of Fig. 18A-H, corresponding to nucleotides 1-1329 of the human DNA sequence of Fig. 18A-H, wherein the nucleotide sequence 724-810 of the human is deleted therefrom, or
- e) a DNA molecule that hybridizes under high stringency conditions to a), b), c) or d).

18. A compound that inhibits agonist binding to a mammalian G-protein coupled D2 receptor polypeptide, wherein the mammalian G-protein coupled D2 receptor polypeptide as an amino acid sequence is identified as the amino acid sequence of Fig. 7A-C, Fig. 18A-H or Fig. 18A-H wherein amino acids 242-270 are deleted therefrom, and wherein the compound is identified by the method of claim 12.

19. A compound according to claim 18, wherein the mammalian D2 dopamine receptor is encoded by a DNA molecule comprising

- a) a DNA molecule having the sequence of Fig. 7A-C,
- b) a DNA molecule having the DNA sequence 1-1245 of Fig. 1A-E,
- c) a DNA molecule having the DNA sequence 1-1329 of the human DNA sequence of Fig. 18A-H,
- d) a DNA molecule having the DNA sequence 1-723 and 811-1329 of the human DNA sequence of Fig. 18A-H, corresponding to nucleotides 1-1329 of the human DNA sequence of Fig. 18A-H, wherein the nucleotide sequence 724-810 of the human is deleted therefrom, or
- e) a DNA molecule that hybridizes under high stringency conditions to a), b), c) or d).